

Remarks

Claims 1-8 and 8-21 are pending.

Claims 1, 3, 5, 12 and 15 are amended.

Claim 2 is original.

Claims 4, 6-11, 13, 14 and 16-21 are as previously presented.

Claim 1 is amended to insert the limitation " and the layer thickness of the layers (A1) and (A2) is from 250 to 350 nm" at the end of the claim. Support is derived from original claim 5.

Claim 3 is amended to delete the range '200 to 500 nm' from the end of the claim and replace it with the range '250 to 350 nm', consistent with instantly amended claim 1. Claim 15 is amended to the value '200' from the range at the end of the claim and replace it with '250', consistent with instantly amended claim 1.

Claims 5 and 12 are amended to delete the range '200 to 350 nm' from the end of the claim and replace it with the range '250 to 300 nm'. Support is found in original claim 5.

No new matter is added.

Restriction

The Examiner has asked Applicants to elect a single species with which to begin prosecution. Applicants are to choose from aluminum flakes comprising layers A1 and A2 and one of the layers:

- 1) layers C1 and C2 of claims 2 and 15
- 2) layer E of claims 6, 8, 11, 16 and 19
- 3) layer F of claims 7, 20 and 21
- 4) layers C1, C2 and E of claim 17 and
- 5) layers C1, C2 and F of claim 18.

The Examiner has determined that the technical feature common to all claims, the flake of claim 1, comprising layers A1, B and A2 can not be a special technical feature linking all claims because the element is disclosed in Coulter, et.al., US 6,150,022.

Applicants elect with traverse the species comprising 1) layers C1 and C2 of claims 2 and 15.

Applicants respectfully submit that the flake of instantly amended claim 1 is not disclosed in Coulter, et.al., US 6,150,022. The Action makes reference to Coulter at column 6, lines 34-37 to describe an aluminum core, column 9 lines 40-41 describes a coating with silicon dioxide which column 9 lines 59-60 is from 200-500 nm thick.

Applicants respectfully note that the selected lines from column 6 of the reference refers to reflector layer 14 of figure 1. In figure 1, layer 14 is part of component 10, the bright metal flake or BMF, which also comprises dielectric layers. However, the dielectric layers of BMF component 10, which comprises layer 14, are not the layers being described by column 9 lines 40-41 column 9 lines 59-60 of the reference. The lines cited from column 9 of the reference refer to component 24 of figure 2A which surround the BMF component 10.

The dielectric layers of Coulter most relevant to the instant layers A1 and A2 are the layers 12 and 16 of Figure 1. Layers 12 and 16 are defined in Coulter in column 7 and lines 26 -30 state "The thickness of each of the support layers can be from about 10 nm to about 200 nm, preferably from about 50 nm to about 200 nm, with a most preferred thickness of about 100 nm." Column 7 lines 39-42 explain, "The upper limit of about 200 nm is selected based upon the observation that color interference between dielectric support layers commences at thicknesses beyond 200 nm."

While Coulter then goes on to say "In situations where color interference is useful, thicker support layers may be used", Applicants respectfully submit that Coulter does not prepare or more fully define thicker layers and more importantly, there is no teaching in Coulter that certain layers thicker than 200 nm result in the "brighter appearance and greater brilliance" of the instant invention, see the instant specification, page 1 line 31 to page 2 line 2).

Evidence that Coulter 'teaches away' from thicker layers in the BMF of component 10 can be found in Column 7 lines 44-47, "From the foregoing, it will be appreciated that the presently preferred core flake section 10 is only about 300 nm thick: about 100 nm for each of the two support layers and about 100 nm for the reflector layer. Despite this exceedingly small flake thickness, it has been surprisingly discovered that a flake having this three-layered structure has sufficient rigidity for use as a highly reflective pigment, primarily because of the inherent uniaxial strengths of the support dielectrics."

Coulter reinforces that the tri-layer BMF of component 10 is the core of the inventive pigments in Column 8 lines 38-49, "In general, the method for fabricating the flake-based pigment of the invention first involves the process of manufacturing core flake section 10. A first dielectric support layer 12 is formed on an upper surface of web 11 as shown in FIG. 1, and a reflector layer 14 is formed on support layer 12, by conventional deposition processes such as physical vapor deposition (PVD). The web 11 is made of a flexible material which can be employed in a conventional roll coater apparatus. A second dielectric support layer 16 can then be formed on reflector layer 14 by a deposition process to complete a core flake film having substantial rigidity so as to provide high reflectance."

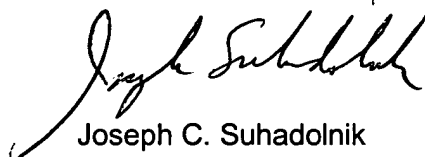
Furthermore, the only pigments prepared in Coulter are those of example 1 "each sample containing a plurality of core flake sections in accordance with the present invention. The reflector layers each had a thickness of about 100 nm of aluminum and ranged in diameter from about 1-50 microns. Inorganic dielectric support layers having a thickness in a range of about 100-200 nm were formed on opposing planar surfaces of the reflector layers".

From the foregoing discussion, Applicants respectfully suggest that the flakes contemplated, described and enabled in Coulter, et.al., US 6,150,022 are those wherein the reflective metal layer is sandwiched between dielectric layers that are 200 nm thick or less in a core defined by component 10. While this core component may be adjacent to dielectric layers 24 which may be 200 - 500 nm, according to the enabled teaching of Coulter, the metal itself is adjacent to thinner layers.

Applicants therefore believe that the flakes of instantly amended claim 1 are novel over Coulter, possess unexpected brighter appearance and greater brilliance as related in the instant specification, and therefore can serve as the special technical feature common to all claims. Applicants therefore kindly ask that the Examiner rejoin all claims either now or upon finding claims 2 and 15 allowable.

Consideration of the elected claims on their merits is respectfully awaited. In the event that minor amendments will further prosecution, Applicants request that the examiner contact the undersigned representative.

Respectfully submitted,



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